No	Information of every subject	
1	Unit name:	Engineering Mathematics (I)
2	Code:	EM-11001
3	Classification:	Supporting Subject
4	Credit value:	4.5
5	Semester/ Year Offered:	1/1
6	Pre-requisite:	
7	Mode of delivery:	Lecture, Tutorial, Oral
8	Assessment system and breakdown of marks: Test	 15%
	Mid-term Examination	35%
9	Academic staff teaching unit:	Engineering Mathematics
10	Course Outcomes of unit: In this course students will be able to • analyze the functions and picture their graphs • calculate the rate of the change of a function and the tangent to the curve. • calculate the slope of a curve at a point and measure the rate at which a function changes. • use derivatives to solve a variety of optimization problems. • compute volume and area through successive approximation.	
11	Synopsis of unit: The course introduces students to Functions, Limits and Continuity, Differentiation, Applications of Derivatives, Integration	
12	Topic: 1. Functions - Functions and Their Graphs - Combining Functions ; Shifting and Scaling Graphs - Trigonometric Functions - Exponential Functions - Inverse Functions and Logarithms 2. Limits and Continuity - Rates of Change and Tangents to Curves - Limit of a Function and Limit Laws	

	- One-Sided Limits - Continuity - Limit Involving Infinity: Asymptotes of Graphs. 3. Differentiation - Tangents and the Derivative at a Point - The Derivative as a Function - Differentiation Rules - Derivatives of Trigonometric Functions - The Chain Rule - Implicit Differentiation - Derivatives of Inverse Functions and Logarithms - Inverse Trigonometric Functions 4. Applications of Derivatives - Extreme Values of Functions - The Mean Value Theorem - Monotonic Functions and the First Derivative Test - Concavity and Curve Sketching - Indeterminate forms and L'Hopital's Rule - Applied Optimization 5. Integration - Sigma Notation and Limits of Finite Sums - The Definite Integral - Indefinite Integrals and the Substitution Method - Substitution and area Between Curves
14	Main references: - Thomas' Calculus (12th Edition), George B. Thomas, Maurice D Weir, Joel R. Hass, Copyright @ 2010, Pearson Education, Inc.
15	Additional References: Thomas, - http:// www. pearsoned.com / legal / permissions.htm.